

APPENDIX 1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Toni A. Armstrong
David L. DeBoer

Serial No.: 10/692,762

Filed: October 24, 2003

For: METHOD FOR THE REGENERATION
OF COTTON

Group Art Unit: 1661

Examiner: Hwu, June

Atty. Dkt. No.: MONS:127USC1

DECLARATION UNDER 37 C.F.R. § 1.131

We, Toni A. Armstrong and David L. DeBoer, hereby declare as follows:

1. We are co-inventors of the subject matter claimed in the above-referenced patent application.
2. We understand that the Patent and Trademark Examiner reviewing this case has asserted that claim 8 of the above-referenced application is anticipated by Kumar *et al.* (*Plant Cell Rep.* 18:59-63), published November 1998.
3. Specifically, we understand that the Examiner asserts that Kumar *et al.* describe use of activated charcoal to promote the *in vitro* regeneration of plants by embryogenesis from cotton callus cells.
4. We are submitting this Declaration to provide evidence demonstrating that the subject matter of claim 8, and specifically the use of activated charcoal in a method for inducing embryos from cotton callus tissue, was conceived of and reduced to practice prior to the November 1998 publication date of Kumar *et al.*

5. All of the work described in this Declaration was performed in the United States.
6. As evidence of the foregoing, we attach as **Exhibit A** laboratory notebook pages showing conception and reduction to practice of the use of activated charcoal for inducing embryos from cotton callus cells prior to November 1998. The dates have been redacted from the copies in Exhibit 1, but all of the studies described in these notebook pages were completed prior to November 1998, and all of these laboratory notebook pages were dated prior to this date.
7. For example, the first two pages of **Exhibit A**, notebook pages numbered 5948468 and 5948471, describe use of plant cell growth media comprising 0.5% charcoal to increase the frequency of embryogenic callus induction of transformed cotton callus cells. The third page of **Exhibit A**, notebook page 5711774, describes an additional experiment comparing use of several media with or without activated charcoal, resulting in embryos transferred to further tissue culture media. These studies therefore show conception and reduction to practice of the method of claim 8 of the present application prior to November 1998.
8. I hereby declare that all statements made of my own knowledge are true and all statements made on information are believed to be true and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

Date: 4/2/07Toni A. Armstrong
Toni A. Armstrong

Date: _____

David L. DeBoer

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5. All of the work described in this Declaration was performed in the United States.

6. As evidence of the foregoing, we attach as **Exhibit A** laboratory notebook pages showing conception and reduction to practice of the use of activated charcoal for inducing embryos from cotton callus cells prior to November 1998. The dates have been redacted from the copies in Exhibit 1, but all of the studies described in these notebook pages were completed prior to November 1998, and all of these laboratory notebook pages were dated prior to this date.

7. For example, the first two pages of **Exhibit A**, notebook pages numbered 5948468 and 5948471, describe use of plant cell growth media comprising 0.5% charcoal to increase the frequency of embryogenic callus induction of transformed cotton callus cells. The third page of **Exhibit A**, notebook page 5711774, describes an additional experiment comparing use of several media with or without activated charcoal, resulting in embryos transferred to further tissue culture media. These studies therefore show conception and reduction to practice of the method of claim 8 of the present application prior to November 1998.

8. I hereby declare that all statements made of my own knowledge are true and all statements made on information are believed to be true and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

Date: _____

Toni A. Armstrong

Date: 4/3/07

David L. DeBoer
David L. DeBoer

EXHIBIT A

Fax sent by : 16367376757

MONSANTO COMPANY
1000 MONROVIA

83-21-87 14:51 Pg: 2/8

No: 5948488

SUBJECT

104.1 66
104.10

UMP (2)

PREPARED BY (SIGNATURE)

Toni Amstrong

DATE

Does a second transfer to UMP increase the frequency of embryogenesis after induction? To answer the above question, part of the callus and cut explants was transferred at 4 weeks to fresh UMP media, 4 calli per plate. Tissue was returned to the main room at 28°C continuous dark.

UMP media was either standard UMP or UMP + 0.5% charcoal.

construct	std
10951	HC
20951	HC

UMP (2)
std
charcoal

4 calli
2/6
2/6

Fax sent by : 16367376757

MONSANTO COMPANY

83-21-87 14:58 Pg: 1/8

No: 5948471

SUBJECT

Exp 69 Transf UHA

PREPARED BY SIGNATURE

Sandra Ebling

DATE

Exp 69 26609 was transf. to UHA
and put in the dark for 12 wks

	Explants	Calls
26609	400	660
26609	Charcoal - 100 calls	

LR
Calls were transferred to UHA
and placed in the warm room
at 28°C in continuous dark.

Construct	explants	Calls	
26609	400	760	(100 were placed in continuous dark)

Fax sent by : 16367376757

MONSANTO COMPANY

83-21-87 14:54 Pg: 8/8

MONSANTO COMPANY

Nº 5711774

SUBJECT

Comparison of sugar and activated charcoal

JOB NO.

PREPARED BY (SIGNATURE)

DATE

Jonie Amstrong

Issue callus lines from Expt 72 P.M.O.N. 17261
were placed on 4 media + control
6% lactase + chunky activated charcoal
6% maltase + chunky AC
6% maltase + fine AC
2% glucose + fine AC (0.75%)
3% glucose (old medium) - control

6% lactase + chunky AC
6% maltase + chunky AC
6% maltase + fine AC
2% glucose + fine AC
old

P007007
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality

P007010
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality

6% lactase + chunky AC
6% maltase + chunky AC
6% maltase + fine AC
2% glucose + fine AC
old

P007008
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality

P007009
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality
0 mature E
callus poor quality

Issue was transferred to T.P. medium
cultured at 25°C with a 16/8 day/night cycle
Mature embryos were transferred to 3% sucrose
lucase media.

P007009 2 embryos
P007010 1 embryo
P007009 2 embryos
P007008 3 embryos

2% glucose
6% maltase + chunky AC
6% maltase + chunky AC
6% maltase fine AC

NAME AND SIGNATURE BY

DATE

Daniel L. Starn